Air Quality Permit

Issued To: EnCana Gathering Services (USA), Inc.
Bowdoin Compressor Station
950 17th Street, Suite 2600
Denver, CO 80202

Permit #2922-04
Application Complete: 07/07/03
Preliminary Determination Issued: 08/15/03
Department's Decision Issued: 09/03/03
Permit Final:
AFS#: 071-0003

An air quality permit, with conditions, is hereby granted to EnCana Gathering Services (USA), Inc. (EnCana), pursuant to Sections 75-2-204 and 75-2-211 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

EnCana owns and operates a natural gas compressor station, known as the Bowdoin Compressor Station, located in the SW¼ of the SE¼ of Section 35, Township 35 North, Range 31 East, in Phillips County, Montana. A complete list of the permitted equipment is contained in Section I.A. of the permit analysis.

B. Current Permit Action

On July 7, 2003, the Department of Environmental Quality (Department) received a Montana Air Quality Permit Application for a modification to Permit #2922-03. EnCana requested in the application that the Department modify Permit #2922-03 to include up to a 2,000-Horsepower (Hp) natural gas compressor engine and a 350,000 British thermal unit per hour (Btu/hr) triethylene glycol (TEG) dehydration unit. The current permit action modifies the permit to include the new equipment and updates the mailing address to reflect the current mailing address, as stated in the permit application. In addition, the name on the permit was changed to incorporate a name change from EnCana Energy Resources, Inc. (EERI) to EnCana, as requested by EERI on June 5, 2003. Also, the permit was updated to reflect current permit language and rule references used by the Department.

Section II: Limitations and Conditions

A. Emission Limitations

1. EnCana shall not operate more than one natural gas compressor engine with a maximum rated design capacity equal to, or less than, 2,000-Hp (as Unit C-113). The engine may be a rich burn engine fitted with a non-selective catalytic reduction (NSCR) unit and an air to fuel ratio (AFR) controller or a lean burn engine retrofitted with an Oxidation Catalyst (OC). The emission limits for the engine shall be determined as follows (ARM 17.8.749 and ARM 17.8.752):

Emission Limit (pound per hour (lb/hr)) = Emission Factor (gram/horsepower-hour (g/hp-hr)) * maximum rated capacity of engine (Hp) * 0.002205 pound per gram (lb/g)

2. The maximum rated design capacity of the engine (Unit C-113) shall not exceed 2,000-Hp and the emission limits for the engine shall be determined by using the equation in Section II.A.1 in conjunction with the appropriate emission factors, as follows (ARM 17.8.752):

Rich Burn Engine with NSCR Unit and AFR Controller

Oxides of Nitrogen (NO_x[1])	1.00 grams per Hp-hour (g/Hp-hr)
Carbon Monoxide (CO)	2.00 g/Hp-hr
Volatile Organic Compounds (VOC)	1.00 g/Hp-hr

Lean Burn Engine with OC

NO_x[1]	1.00 g/Hp-hr
CO	0.50 g/Hp-hr
VOC	1.00 g/Hp-hr

3. The speed for each of the 1085-Hp Caterpillar compressor engines (Units C-110, C-111, and C-112) shall not exceed 1200 revolutions per minute (rpm) of continuous duty operation. Each of the 1085-Hp Caterpillar compressor engines shall have a minimum stack height of 24 feet above ground level and the emissions from each engine shall not exceed the following (ARM 17.8.752):

NO_x[1]	4.78 lb/hr
CO	3.56 lb/hr
VOC	0.50 lb/hr

4. EnCana shall direct all dehydrator still column vent emissions to an underground storage tank. The vent line exit from the tank shall be a minimum of 14 feet above ground level (ARM 17.8.752).

5. The 126-Hp Caterpillar engine driving an 85-kilowatt (kW) generator (Unit PK-70) shall be used only on an emergency basis when commercial, purchased power is unavailable. The operating hours for this unit shall not exceed 2,000 hours per year (hr/yr). The engine shall have a minimum stack height of 24 feet above ground level and emissions shall not exceed the following (ARM 17.8.752):

NO_x[1]	3.88 lb/hr
CO	0.21 lb/hr
VOC	0.04 lb/hr

6. EnCana shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

7. EnCana shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

1 NO_x reported as NO_2

8. EnCana shall treat all unpaved portions of the access roads, parking lots, and the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.7. (ARM 17.8.749).

9. EnCana shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.752).

B. Testing Requirements

1. The compressor engine (Unit C-113) shall be initially tested for NO_X and CO, concurrently, to demonstrate compliance with the NO_x and CO emission limits as calculated in Section II.A.1 and Section II.A.2, within 180 days of the initial start up date of the compressor engine. Further testing shall continue on an every-4-year basis or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).

2. The 1085-Hp Caterpillar compressor engine (Unit C-112) was initially tested for NO_X and CO, concurrently, in May 1999. The other two 1085-Hp Caterpillar compressor engines (Units C-110 and C-111) were initially tested for NO_x and CO, concurrently, in November 1997. All three compressor engines demonstrated compliance with the NO_x and CO emission limits contained in Section II.A.3. Further testing for Units C-110, C-111, and C-112 shall occur on an every 4-year basis from when they were initially tested, or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).

3. During each test, EnCana shall monitor the intake manifold temperature and pressure, the exhaust temperature, manifold pressure, engine rpm, and all parameters necessary to calculate horsepower. This information shall be submitted to the Department along with the Source Test Report (ARM 17.8.105).

4. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

5. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. EnCana shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the most recent emission inventory report and sources identified in the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in units as required by the Department. This information may be used for calculating operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations. In addition, EnCana shall submit the following information annually to the Department by March 1 of each year; the information may be submitted with the annual emission inventory (ARM 17.8.505).

a. Hours of operation of the 126-Hp Caterpillar engine driving an 85-kW generator (Unit PK-70), and

b. Summary report listing the reasons why the 126-Hp Caterpillar engine driving the 85-kW generator (Unit PK-70) was operating.

2. EnCana shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745(1), that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start-up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by EnCana as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

D. Notification

EnCana shall provide the Department with written notification of the following information within the specified time periods (ARM 17.8.749):

1. EnCana shall provide the Department with written notification of commencement of construction of Unit C-113, within 30 days after commencement of construction.

2. EnCana shall provide the Department with the actual start-up date Unit C-113, within 15 days after the actual start-up date of the engine.

3. Within 15 days after the actual startup date of Unit C-113, EnCana shall provide the Department with written notification of the specifications of the engine (maximum rated design capacity, rich burn or lean burn, and two stroke or four stroke) to be installed according to Section II.A.1.

Section III: General Conditions

A. Inspection - EnCana shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if EnCana fails to appeal as indicated below.

C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving EnCana a of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740 *et seq.* (ARM 17.8.756).

D. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement as specified in Section 75-2-401 *et seq.*, MCA.

E. Appeals - Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders it's decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The Department's decision on the application is not final unless 15 days have elapsed and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board.

F. Permit Inspection - As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.

G. Permit Fee - Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by EnCana may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Construction Commencement – Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

Permit Analysis
EnCana Gathering Services (USA), Inc.
Permit #2922-04

I. Introduction/Project Description

A. Permitted Equipment

EnCana Gathering Services (USA), Inc. (EnCana) owns and operates a natural gas compressor station known as the Bowdoin Compressor Station. The facility includes, but is not limited to, the following equipment:

UNIT ID	UNIT DESCRIPTION
C-110	1085-horsepower (Hp) Caterpillar G3516TA LE compressor engine;
C-111	1085-Hp Caterpillar G3516TA LE compressor engine;
C-112	1085-Hp Caterpillar G3516TA LE compressor engine;
C-113	Up to a 2,000-Hp compressor engine;
PK-100	12.5-million standard cubic feet per day (MMScfd) triethylene glycol (TEG) dehydration unit with a 350,000-British thermal units per hour (Btu/hr) glycol reboiler and a still vent;
PK-101	12.5-MMScfd TEG dehydration unit with a 350,000-Btu/hr glycol reboiler and a still vent;
PK-102	12.5-MMScfd TEG dehydration unit with a 350,000-Btu/hr glycol reboiler and a still vent;
PK-60	350,000-Btu/hr space heater boiler; and
PK-70	126-Hp Caterpillar G3306 NA engine driving an 85-kilowatt (kW) generator (to be used for emergency backup).
	Miscellaneous VOC emissions from the methanol injection system and storage tank, emergency vent stack/compressor blowdowns, and component leaks.

B. Source Description

EnCana compresses and dehydrates natural gas delivered to the station from gas wells in the area. Compressed and dehydrated gas is delivered to a pipeline for redelivery to Northern Border Pipeline at a point near Monchy, Saskatchewan, Canada.

EnCana's Bowdoin Compressor Station is located in the SW¼ of the SE¼ of Section 35, Township 35 North, Range 31 East, in Phillips County, Montana. The station site is located approximately 1¼ miles south of the town of Whitewater, Montana. The total area is approximately 8 acres. The site is flat and access to the site is from the north. The site is fenced on all sides with a 6-foot chain-link fence and three strands of barbed wire.

C. Permit History

On June 16, 1996, North American Resources Company (NARCO) was issued Permit **#2922-00** for the construction and operation of a natural gas compressor station and associated equipment. The emitting units permitted were two 1085-Hp Caterpillar G3516TA LE compressor engines (Unit C-110 and C-111), one 1665-Hp Caterpillar G3606TA LE compressor engine (Unit C-112), two 12.5-MMScfd TEG dehydration units each with a 350,000-Btu/hr glycol reboiler and a still vent (Unit PK-100 and PK-101), one 350,000-Btu/hr space heater boiler (Unit PK-70), and one 126-Hp Caterpillar G3306 NA engine driving a 85-kW generator (Unit PK-60) (to be used for emergency backup). Miscellaneous volatile organic compound (VOC) emissions from the methanol storage tank, emergency vent stack/compressor blowdowns, and component leaks were also considered.

On July 9, 1998, NARCO requested an alteration to Permit #2922-00. This permit action consisted of removing the 1665-Hp Caterpillar G3606TA LE compressor engine and replacing it with a third 1085-Hp Caterpillar G3516TA LE compressor engine. Also, the rule references were updated. Permit **#2922-01** replaced Permit #2922-00 on September 13, 1998.

In 1999, the U.S. Environmental Protection Agency (EPA) informed the Department of Environmental Quality (Department) that any condition in a Montana Air Quality Permit would be considered a federally enforceable condition. However, there are certain state rules that were never intended to be federally enforceable. The Department notified all facilities holding Montana Air Quality Permits that they could request deletion of those conditions based on the Administrative Rules of Montana (ARM) 17.8.717 and 17.8.315. Removing either of these conditions did not relieve the facility from complying with the rule upon which the permit condition was based; removal only ensures that enforcement of the condition remains solely with the Department. This permit action removed the condition, based on ARM 17.8.717, from the permit. Furthermore, the rule references and permit format were updated and the testing requirements contained in Sections II.B.3. and II.B.4. in Permit # 2922-01 were removed because NARCO had demonstrated compliance with the natural gas sample analysis requirement. Permit **#2922-02** replaced Permit #2922-01 on December 7, 2000.

On January 22, 2002, the Department received a notice of corporate merger and name change from PanCanadian Energy Resources, Inc. (PanCanadian). The letter notified the Department that Montana Power Gas Company, Xeno, Inc., and Entech Gas Ventures, Inc. merged into NARCO as of January 1, 2002. The letter also stated that at the same time, NARCO changed its corporate name to PanCanadian. In addition, on April 18, 2002, the Department received a letter from PanCanadian that requested a name change from PanCanadian to EnCana. This permit action transferred the permit from NARCO to EnCana. **Permit #2922-03** replaced Permit #2922-02 on August 7, 2002.

D. Current Permit Action

On July 7, 2003, the Department received a Montana Air Quality Permit Application for a modification to Permit #2922-03. EnCana requested in the application that the Department modify Permit #2922-03 to include up to a 2,000-Hp natural gas compressor engine and a 350,000-Btu/hr TEG dehydration unit. The current permit action modifies the permit to include the new equipment and updates the mailing address to reflect the current mailing address, as stated in the permit application. In addition, the name on the permit was changed to incorporate a name change from EnCana Energy Resources, Inc. (EERI) to EnCana, as requested by EERI on June 5, 2003. Also, the permit was updated to reflect current permit language and rule references used by the Department. **Permit #2922-04** replaces Permit #2922-03.

E. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the ARM and are available, upon request, from the Department. Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 - General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment, including instruments and sensing devices, and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

   EnCana shall comply with all requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 - Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter

8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}

EnCana must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 - Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged to an outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate. (2) Under this rule, EnCana shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions. EnCana will consume pipeline-quality natural gas in its fuel burning equipment, which will comply with this limitation.

6. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. The owner or operator of any stationary source or modification, as defined and applied in 40 CFR Part 60, shall comply with the standards and provisions of 40 CFR Part 60.

   40 CFR 60, Subpart KKK Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plants. Owners or operators of onshore natural gas processing plants, as defined and applied in 40 CFR Part 60, shall comply with standards and provisions of 40 CFR Part 60, Subpart KKK. This subpart does not apply to the EnCana facility because the facility does not meet the definition of a natural gas processing plant as defined in 40 CFR Part 60, Subpart KKK.

7. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The owner or operator of any affected source, as defined and applied in 40 CFR Part 63, shall comply with the applicable subparts of 40 CFR Part 63.

40 CFR 63, Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities. Owners or operators of oil and natural gas production facilities, as defined and applied in 40 CFR Part 63, shall comply with the applicable provisions of 40 CFR Part 63, Subpart HH. In order for a natural gas production facility to be subject to 40 CFR Part 63, Subpart HH requirements, certain criteria must be met. First, the facility must be a major source of Hazardous Air Pollutants (HAP) as determined according to paragraphs (a)(1)(i) through (a)(1)(iii) of 40 CFR 63, Subpart HH. Second, a facility that is determined to be major for HAPs must also either process, upgrade, or store hydrocarbon liquids prior to the point of custody transfer, or process, upgrade, or store natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user. Third, the facility must also contain an affected source as specified in paragraphs (b)(1) through (b)(4) of 40 CFR Part 63, Subpart HH. Finally, if the first three criteria are met, and the exemptions contained in paragraphs (e)(1) and (e)(2) of 40 CFR Part 63, Subpart HH do not apply, the facility is subject to the applicable provisions of 40 CFR Part 63, Subpart HH. Because the facility is not a major source of HAPs, EnCana is not subject to the provisions of 40 CFR Part 63, Subpart HH.

40 CFR 63, Subpart HHH National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities. Owners or operators of natural gas transmission or storage facilities, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR Part 63, Subpart HHH. In order for a natural gas transmission and storage facility to be subject to 40 CFR Part 63, Subpart HHH requirements, certain criteria must be met. First, the facility must transport or store natural gas prior to the gas entering the pipeline to a local distribution company or to a final end user if there is no local distribution company. In addition, the facility must be a major source of HAPs as determined using the maximum natural gas throughput as calculated in either paragraphs (a)(1) and (a)(2) or paragraphs (a)(2) and (a)(3) of 40 CFR Part 63, Subpart HHH. Second, a facility must contain an affected source (glycol dehydration unit) as defined in paragraph (b) of 40 CFR Part 63, Subpart HHH. Finally, if the first two criteria are met, and the exemptions contained in paragraph (f) of 40 CFR Part 63, Subpart HHH, do not apply, the facility is subject to the applicable provisions of 40 CFR Part 63, Subpart HHH. Because the facility is not a major source of HAPs, EnCana is not subject to the provisions of 40 CFR 63, Subpart HHH.

D. ARM 17.8, Subchapter 5 - Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. EnCana shall submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. EnCana submitted the appropriate permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department. This operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions which pro-rate the required fee amount.

E. ARM 17.8, Subchapter 7 - Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this subchapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. EnCana has the potential to emit more than 25 tons per year of nitrogen oxides (NO_X), carbon monoxide (CO), and volatile organic compounds (VOC); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration, or use of a source. EnCana submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. EnCana submitted an affidavit of publication of public notice for the July 10, 2003, issue of *The Great Falls Tribune*, a newspaper of general circulation in the Town of Great Falls in Cascade County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Statutes and Rules. This rule states that nothing in the permit shall be construed as relieving EnCana of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 - Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any

major modification with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since the facility is not a listed source and the facility's potential to emit is less than 250 tons per year of any air pollutant.

G. ARM 17.8, Subchapter 12 - Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) A Major Source under Section 7412 of the FCAA is defined as any stationary source having:

   a. PTE > 100 tons/year of any pollutant;

   b. PTE > 10 tons/year of any one HAP, PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

   c. PTE > 70 tons/year of PM_{10} in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V operating permit. In reviewing and issuing Air Quality Permit #2922-04 for EnCana, the following conclusions were made:

   a. The facility's PTE is less than 100 tons/year for any pollutant.

   b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year of all HAPs.

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. The facility is not subject to any current NSPS.

   e. This facility is not subject to any current NESHAP standards.

   f. The source is not a Title IV affected source nor a solid waste combustion unit.

   g. The source is not an EPA designated Title V source.

   Based on these facts, the Department determined that EnCana is a minor source of emissions as defined under Title V.

III. BACT Determination

A BACT determination is required for each new or altered source. EnCana shall install on the new or altered source the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. A BACT analysis was required for NO_x and CO emissions from the proposed compressor engine and VOC emissions from the TEG dehydration unit still vent. The Department reviewed previous BACT determinations before making the following BACT determination.

A. <u>Compressor Engine ≤ 2,000-Hp</u>

1. Catalytic Oxidation

Catalytic Oxidation is a post combustion technology that has been applied to oxidize CO emissions from lean burn engines. As mentioned in Section III.A.4 of this permit analysis, lean burn technologies may cause increased CO emissions. In a catalytic oxidation system, CO passes over a catalyst, usually a noble metal, which oxidizes the CO to CO_2 at efficiencies of 70-90%.

2. Selective Catalytic Reduction (SCR) Unit

SCR is a post combustion technology that has been shown to be effective in reducing NO_x emissions from lean burn engines. SCR units can achieve NO_x control efficiencies as high as 90% for lean burn engines that are operated at a constant load. An SCR unit selectively reduces NO_x emissions by injecting either liquid anhydrous ammonia or aqueous ammonium hydroxide into the exhaust gas stream prior to the gas stream reaching the catalyst. The catalyst is typically made from noble metals, base metal oxides (such as vanadium and titanium, and zeolite-based material). NO_x, NH_3, and O_2 react on the surface of the catalyst to form N_2 and H_2O. For an SCR unit to operate properly, the exhaust gas must be within a particular temperature range (typically between 450 degrees Fahrenheit (°F) and 850°F). The catalyst that is utilized dictates the temperature range. Exhaust gas temperatures greater than the upper limit will pass the NO_x and NH_3 through the catalyst prior to the reaction. NH_3 emissions, called ammonia slip, are a key consideration when specifying an SCR unit.

3. Lean-Burn Engine with an Air Fuel Ratio (AFR) controller

The NO_x and CO emissions from a lean-burn engine can be stabilized by installing an electronic AFR controller. An AFR controller maintains the proper air to fuel ratio that will optimize the performance of the lean burn engine. A lean-burn engine with an AFR controller achieves approximately the same reduction in NO_x emissions as a rich-burn engine fitted with an NSCR unit and an AFR controller.

4. Lean-Burn Engine

The lean-burn engine uses a precombustion chamber to enclose a rich mixture of air and fuel; the mixture is then ignited in this chamber. The resulting ignition front fires into the larger main cylinder that contains a much leaner fuel mixture. Staging the combustion and burning a leaner fuel mixture results in lowering of peak flame temperatures. Lower combustion temperature assures lower NO_x concentration in the exhaust gas stream; however, excess air in the fuel/air mixture can result in increased CO emissions.

5. Non-Selective Catalytic Reduction (NSCR) Unit with an AFR Controller

In order to provide for the most effective use of the catalyst in an NSCR unit (described in Section III.A.6), it is necessary to install an electronic AFR controller (described in Section III.A.7.). An AFR controller maintains the proper air/fuel ratio that will optimize the degree of reducing agents in order to provide maximum emission reduction while minimizing agents that can poison the catalyst.

6. NSCR Unit

An NSCR unit controls NO_x emissions by using the CO and the residual hydrocarbons in the exhaust of a rich-burn engine as a reducing agent for NO_x. Without the catalyst, in the presence of oxygen, the hydrocarbons will be oxidized instead of reacting with NO_x. As the excess hydrocarbon and NO_x pass over a honeycomb or monolithic catalyst (usually a combination of noble metals such as platinum, palladium, and/or rhodium), the reactants are reduced to N_2, H_2O, and CO_2. The noble metal catalyst usually operates between 800 °F and 1,200°F; therefore, the unit would normally be mounted near the engine exhaust to maintain a high enough temperature to allow the various reactions to occur. In order to achieve maximum performance, 80% to 90% reduction of NO_x concentration, the engine needs to burn a rich fuel mixture, causing the engine to operate less efficiently.

7. AFR Controller (NO_x Control at the Crossover Point)

In this process, the proper air-to-fuel ratio is obtained by adjusting the engine to operate at the crossover point, where NO_x and CO emissions are equal. Excess hydrocarbon in a rich fuel mixture causes incomplete combustion; thus, lowering the exhaust temperature to a point where the concentration of NO_x decreases, but the concentration of CO increases. Combustion of a lean fuel mixture occurs at higher temperatures accompanied by higher concentration of NO_x but a lower concentration of CO. At the crossover point, the engine operates neither too lean nor too rich.

8. No Additional Controls

This practice would consist of operating the natural gas compressor engine without any add-on pollution control equipment.

9. Summary

An SCR unit can be utilized to effectively reduce NO_x emissions. However, SCR units are only applicable to lean burn engines because a high oxygen concentration (as found in lean burn engines) is needed for the unit to operate properly. In addition, for engines that typically operate at variable loads, such as engines utilized for natural gas transmission, an SCR unit may not function effectively and may cause either periods of ammonia slip or periods of insufficient ammonia injection. Because SCR units are not used on engines that operate at variable loads (such as natural gas compressor engines), the Department determined that a lean burn engine with an SCR unit would not be able to meet the BACT emission limits and will not constitute BACT for the compressor engine.

A lean-burn engine with an AFR controller can also be utilized to effectively reduce NO_x and CO emissions. A lean-burn engine has a higher initial cost than a rich-burn engine fitted with an NSCR unit and an AFR controller. However, since there is no add-on equipment, the lean-burn engine requires far less maintenance than a rich-burn engine fitted with an NSCR unit and an AFR controller. However, a lean burn engine does not provide as high of a reduction in CO emissions as a lean burn engine fitted with an oxidation catalyst. Therefore, the Department determined that a lean burn engine with an AFR

controller would not be able to meet the BACT emission limits and will not constitute BACT for the compressor engine.
A lean burn engine effectively reduces NO_x emissions. However, as stated in Section III.A.4 of this permit analysis, the lower combustion temperatures as found in lean burn engines can result in increased CO emissions. Therefore, the Department determined that a lean burn engine, alone, would not be able to meet the BACT emission limits and will not constitute BACT for the compressor engine.

An NSCR unit can be used to effectively reduce NO_x and CO emissions from rich burn engines. However, the engine needs to burn a rich fuel mixture to achieve maximum performance, causing the engine to operate less efficiently and an NSCR unit does not provide as high of a reduction in NO_x and CO emissions as an NSCR unit with an AFR controller. Therefore, the Department determined that an NSCR unit, alone, would not be able to meet the BACT emission limits and will not constitute BACT for the compressor engine.

Use of an AFR controller to adjust the engine to operate at the crossover point results in both NO_x and CO emissions at reasonable levels for lower power engines. However, an AFR controller does not reduce NO_x and CO emissions as well as an NSCR unit; therefore, the Department determined that an AFR controller, alone, would not be able to meet the BACT emission limits and will not constitute BACT for the compressor engine.

While no additional controls would have no energy or economic impacts on EnCana, no additional controls would have negative impacts on air quality. Therefore, the Department determined that “no additional controls” would not be able to meet the BACT emission limits and will not constitute BACT for the compressor engine.

EnCana proposed to install a natural gas compressor engine with a maximum rated design capacity equal to, or less than 2,000-Hp. EnCana requested the flexibility of installing either a rich burn engine fitted with an NSCR unit and an AFR controller or a lean burn engine fitted with an oxidation catalyst. The Department determined that an NSCR unit and an AFR controller is necessary to meet the BACT emission limits and will constitute BACT if a rich burn engine is utilized. NSCR/AFR control equipment typically constitutes BACT for rich-burn compressor engines to be able to meet BACT emission limts. An NSCR unit with an electronic AFR controller effectively reduces NO_x and CO emissions and is an economically and environmentally feasible option. In addition, the Department determined that a lean burn engine fitted with an oxidation catalyst is necessary to meet the BACT emission limits and will constitute BACT if a lean burn engine is utilized. A lean burn engine fitted with an oxidation catalyst effectively reduces NO_x and CO emissions and is also an economically and environmentally feasible option.

The pound per hour BACT emission limits for the compressor engine (C-113) are based on the appropriate emission factors (as listed in Section II.A.2 of the permit), depending on whether a rich burn engine or a lean burn engine is utilized.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the BACT emission limits.

B. TEG Dehydration Unit Still Vent

1. Condenser Technology

Vapors from the still column can be routed to a dedicated condensing device, which cools the vapor stream and causes the water vapor and most of the aromatic hydrocarbons to condense. The non-condensable vapor, including methane, may be used for fuel, incinerated, or compressed into the natural gas stream to be dehydrated. The condensed vapor can be separated into water and hydrocarbon liquid and disposed of or processed at another facility to recover hydrocarbons.

Ambient air condensers, forced air-cooled condensers, water cooled condensers, and refrigerated condensers are all types of design variations that can be used. Air-cooled condensers are one of the most commonly used options for larger facilities due to the relatively simple design and low capital cost. Properly operating condensers can achieve VOC control efficiency of 85% to 99%. However, capital costs and installation costs of many commercially available condensers may make them prohibitively expensive for installation at most small compressor stations and wellsites.

2. Combustion of Still Column Vent Vapors

Commercially available flare systems are available, which collect and burn the vent gases with destruction efficiencies of VOC of 98% or more. Flare systems are not typically installed on TEG dehydrators operating in colder climates for a number of reasons including:

- Flare systems can exert backpressure on the reboiler
- Unless a flare system is heat traced, or designed with a slope and insulation that allows liquids to flow back into the still column, the high water content may lead to freezing in colder conditions
- An eductor may be required to move the low pressure gas from the still column to the flare
- A flare may require supplemental fuel gas to enable burning of the high water content (>95%) still column vent vapors

Vapors from the still column may alternatively be disposed of by routing them to a thermal incinerator. Thermal incinerators do not necessarily require supplemental fuel. The retention of the flame heat in the incinerator chamber allows the unit to burn mixtures with lower heating values. However, exhaust gas from the pump vent can be piped to incinerating devices as supplemental fuel, if required.

3. Flash Separator Installation on Process Stream

VOC can be partially removed from the reboiler glycol by passing the stream through a glycol flash separator. The separated gas can be disposed of by flaring or incineration, condensed for sale as product, accumulated as sales gas, or used as supplemental fuel gas for the reboiler. The flash tank may also maximize the VOC recovery efficiency of any controls installed on the reboiler still column (i.e., condenser). Capital and installation costs will depend on the availability of existing facilities to dispose or collect the gas.

4. Optimization of Glycol Circulation Rate

Increased glycol circulation rates result in greater emissions from the still column vent and from the reboiler burner exhaust due to increased reboiler duty. Most systems operate with conservative (higher than necessary) glycol flow rate to ensure that the required water content of the sales gas is never exceeded. The common industry practice is to set the glycol circulation rate at 10% above peak flows to accommodate a safety factor for moisture content in the sales gas. As the producing reservoir's characteristics change (i.e. change in pressures and flow rates) the glycol circulation rate is rarely changed because many compressor stations that utilize glycol dehydration units are located in remote areas and are unmanned stations.

By installing a moisture analyzer on the sales gas pipeline and using the output signal to regulate a variable speed circulation pump, the glycol circulation rate can be managed effectively to maintain gas moisture levels within specifications. There are essentially no capital or operating costs associated with adjusting the glycol circulation rate. However, there would be added costs for a variable speed pump, controls, and a moisture analyzer.

5. Tie Still Column Vent Into Storage Tank

Piping the still column vent vapors through a sloping line to an aboveground or underground storage tank significantly reduces VOC emissions by cooling the hydrocarbons, reducing their vapor pressures, and achieving condensation within the piping and the storage tank. Heat tracing or insulation is usually installed to prevent freezing of aboveground tanks for cold weather operation. The use of an underground storage tank to collect VOC liquids may trigger the Montana Underground Storage Tank Rules. Field measurements suggest that temperature measurements of an insulated aboveground tank collecting liquids are approximately 200˚C greater than ambient conditions. Depending on site-specific conditions and whether an aboveground tank or an underground tank is used, the control efficiency for VOC emissions may range from 30% to 90%. Control costs will also vary depending on tank type.

6. No additional Controls

No additional controls typically constitutes BACT for TEG dehydration unit still vents because the relatively small amount of VOC emissions that are typical from these sources would make installing control equipment cost prohibitive.

7. Summary

Due to the relatively small amount of VOC emissions resulting from the operation of the TEG dehydration unit still vent, the installation and operation of control equipment would be cost prohibitive. However, EnCana is currently required to vent VOC emissions from the two existing TEG dehydration units to an underground storage tank. Therefore, the Department determined that routing VOC emissions from the proposed TEG dehydration unit still vent to the existing under ground storage tank would not be cost prohibitive and constitutes BACT for the proposed TEG dehydration unit still vent.

IV. Emission Inventory

Source	Tons/Year PM_{10}	NO_x	VOC	CO	SO_x
1085-Hp Caterpillar G3516TA LE (C-110)	0.36	20.96	2.20	15.61	0.02
1085-Hp Caterpillar G3516TA LE (C-111)	0.36	20.96	2.20	15.61	0.02
1085-Hp Caterpillar G3516TA LE (C-112)	0.36	20.96	2.20	15.61	0.02
Compressor Engine ≤ 2,000-Hp (C-113)	0.30	19.32	19.32	38.63	0.02
TEG Regenerator Vent (PK-100)	0.00	0.00	0.74	0.00	0.00
TEG Regenerator Vent (PK-101)	0.00	0.00	0.74	0.00	0.00
TEG Regenerator Vent (PK-102)	0.00	0.00	0.74	0.00	0.00
Dehydrator Reboiler (PK-100)	0.01	0.17	0.01	0.07	0.00
Dehydrator Reboiler (PK-101)	0.01	0.17	0.01	0.07	0.00
Dehydrator Reboiler (PK-102)	0.01	0.17	0.01	0.07	0.00
Space Heating Boiler (PK-60)	0.01	0.17	0.01	0.07	0.00
Emergency Electrical Generator (PK-70)	0.28	3.88	0.04	0.21	0.26
Fugitive VOC Sources			negl.		
Total	1.70	86.76	28.22	85.95	0.34

1085-Hp Caterpillar G3516TA LE (C-110)

Brake Horsepower: 1085 Hp @ 1200 rpm
Hours of operation: 8760 hr/yr
Fuel Input = 7700 BTU/Hp-hr * 1085 Hp / 1E06 = 8.35 MMBtu/hr

PM_{10} Emissions

Emission Factor: 0.00991 lb/MMBtu (AP-42, Table 3.2-1, 7/00)
Fuel Consumption: 8.35 MMBtu/hr (Maximum Design)
Calculations: 0.00991 lb/MMBtu * 8.35 MMBtu/hr = 0.083 lb/hr
0.083 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.36 ton/yr

NO_x Emissions

Emission factor: 2.00 gram/Hp-hr (BACT Determination)
Calculations: 2.00 gram/Hp-hr * 1085 Hp * 0.002205 lb/gram = 4.78 lb/hr
4.78 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 20.96 ton/yr

VOC Emissions

Emission factor: 0.21 gram/Hp-hr (BACT Determination)
Calculations: 0.21 gram/Hp-hr * 1085 Hp * 0.002205 lb/gram = 0.50 lb/hr
0.50 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 2.20 ton/yr

CO Emissions

Emission factor: 1.49 gram/Hp-hr (BACT Determination)
Calculations: 1.49 gram/Hp-hr * 1085 Hp * 0.002205 lb/gram = 3.56 lb/hr
2.56 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 15.61 ton/yr

SO_x Emissions

Emission Factor: 0.000588 lb/MMBtu (AP-42, Table 3.2-1, 7/00)
Fuel Consumption: 8.35 MMBtu/hr (Maximum Design)
Calculations: 0.000588 lb/MMBtu * 8.35 MMBtu/hr = 0.005 lb/hr
0.005 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.02 ton/yr

1085-Hp Caterpillar G3516TA LE (C-111)

Brake Horsepower: 1085 Hp @ 1200 rpm
Hours of operation: 8760 hr/yr
Fuel Input = 7700 BTU/Hp-hr * 1085 Hp / 1E06 = 8.35 MMBtu/hr

PM_{10} Emissions

Emission Factor: 0.00991 lb/MMBtu (AP-42, Table 3.2-1, 7/00)
Fuel Consumption: 8.35 MMBtu/hr (Maximum Design)
Calculations: 0.00991 lb/MMBtu * 8.35 MMBtu/hr = 0.083 lb/hr
0.083 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.36 ton/yr

NO_x Emissions

Emission factor: 2.00 gram/Hp-hr (BACT Determination)
Calculations: 2.00 gram/Hp-hr * 1085 Hp * 0.002205 lb/gram = 4.78 lb/hr
4.78 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 20.96 ton/yr

VOC Emissions

Emission factor: 0.21 gram/Hp-hr (BACT Determination)
Calculations: 0.21 gram/Hp-hr * 1085 Hp * 0.002205 lb/gram = 0.50 lb/hr
0.50 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 2.20 ton/yr

CO Emissions

Emission factor: 1.49 gram/Hp-hr (BACT Determination)
Calculations: 1.49 gram/Hp-hr * 1085 Hp * 0.002205 lb/gram = 3.56 lb/hr
2.57 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 15.61 ton/yr

SO_x Emissions

Emission Factor: 0.000588 lb/MMBtu (AP-42, Table 3.2-1, 7/00)
Fuel Consumption: 8.35 MMBtu/hr (Maximum Design)
Calculations: 0.000588 lb/MMBtu * 8.35 MMBtu/hr = 0.005 lb/hr
0.005 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.02 ton/yr

1085-Hp Caterpillar G3516TA LE (C-112)

Brake Horsepower: 1085 Hp @ 1200 rpm
Hours of operation: 8760 hr/yr
Fuel Input = 7700 BTU/Hp-hr * 1085 Hp / 1E06 = 8.35 MMBtu/hr

PM_{10} Emissions

Emission Factor: 0.00991 lb/MMBtu (AP-42, Table 3.2-1, 7/00)
Fuel Consumption: 8.35 MMBtu/hr (Maximum Design)
Calculations: 0.00991 lb/MMBtu * 8.35 MMBtu/hr = 0.083 lb/hr
0.083 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.36 ton/yr

NO_x Emissions

Emission factor: 2.00 gram/Hp-hr (BACT Determination)
Calculations: 2.00 gram/Hp-hr * 1085 Hp * 0.002205 lb/gram = 4.78 lb/hr
4.78 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 20.96 ton/yr

VOC Emissions

Emission factor: 0.21 gram/Hp-hr (BACT Determination)
Calculations: 0.21 gram/Hp-hr * 1085 Hp * 0.002205 lb/gram = 0.50 lb/hr
0.50 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 2.20 ton/yr

CO Emissions

Emission factor: 1.49 gram/Hp-hr (BACT Determination)
Calculations: 1.49 gram/Hp-hr * 1085 Hp * 0.002205 lb/gram = 3.56 lb/hr
2.58 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 15.61 ton/yr

SO_x Emissions

Emission Factor: 0.000588 lb/MMBtu (AP-42, Table 3.2-1, 7/00)
Fuel Consumption: 8.35 MMBtu/hr (Maximum Design)
Calculations: 0.000588 lb/MMBtu * 8.35 MMBtu/hr = 0.005 lb/hr
0.005 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.02 ton/yr

Compressor Engine ≤ 2,000-Hp (C-113)

Brake Horsepower: 2,000 bhp
Hours of operation: 8760 hr/yr

PM_{10} Emissions

Emission Factor:	0.0.0095 lb/MMBtu	(AP-42, Table 3.2-3, 7/00)
Fuel Consumption:	7.28 MMBtu/hr	(Permit Application #2922-04)
Calculations:	7.28 MMBtu/hr * 0.0.0095 lb/MMBtu * = 0.069 lb/hr	
	0.069 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.30 ton/yr	

NO_x Emissions

Emission factor:	1.00 gram/bhp-hr	(BACT Determination)
Calculations:	1.00 gram/bhp-hr * 2,000 Hp * 0.002205 lb/gram = 4.410 lb/hr	
	4.410 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 19.32 ton/yr	

VOC Emissions

Emission factor:	1.00 gram/bhp-hr	(BACT Determination)
Calculations:	1.00 gram/bhp-hr * 2,000 Hp * 0.002205 lb/gram = 4.410 lb/hr	
	4.410 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 19.32 ton/yr	

CO Emissions

Emission factor:	2.0 gram/bhp-hr	(BACT Determination)
Calculations:	2.00 gram/bhp-hr * 2,000 Hp * 0.002205 lb/gram = 8.820 lb/hr	
	8.820 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 38.63 ton/yr	

SO_x Emissions

Emission Factor:	0.000588 lb/MMBtu	(AP-42, Table 3.2-3, 7/00)
Fuel Consumption:	7.28 MMBtu/hr	
Calculations:	7.28 MMBtu/hr * 0.000588 lb/MMBtu * = 0.004 lb/hr	
	0.004 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.02 ton/yr	

TEG Regenerator Vent (PK-100)

The following emission summary has been estimated using the GRI-GLYCalc program. For the detailed input parameters refer to the permit application.

Regenerator Vent

Glycol Type:	TEG
Annual Hours of Operation:	8760
Dry Gas Flow Rate:	12.00 MMScf/day (maximum)
Control Device:	Underground storage tank
Control Efficiency:	30%
Flash Separator:	N/A
Stripping Gas:	42,000 Scf/day Dry Product Gas

Uncontrolled Regenerator Emissions	lb/hr	ton/yr
Total VOC Emissions	0.31	1.35
Total HAP Emissions	0.24	1.05

Controlled Regenerator Emissions	lb/hr	ton/yr
Total VOC Emissions	0.22	0.95
Total HAP Emissions	0.17	0.74

TEG Regenerator Vent (PK-101)

The following emission summary has been estimated using the GRI-GLYCalc program. For the detailed input parameters refer to the permit application.

Regenerator Vent

Glycol Type: TEG
Annual Hours of Operation: 8760
Dry Gas Flow Rate: 12.00 MMScf/day (maximum)
Control Device: Underground storage tank
Control Efficiency: 30%
Flash Separator: N/A
Stripping Gas: 42,000 Scf/day Dry Product Gas

Uncontrolled Regenerator Emissions	lb/hr	ton/yr
Total VOC Emissions	0.31	1.35
Total HAP Emissions	0.24	1.05

Controlled Regenerator Emissions	lb/hr	ton/yr
Total VOC Emissions	0.22	0.95
Total HAP Emissions	0.17	0.74

TEG Regenerator Vent (PK-102)

The following emission summary has been estimated using the GRI-GLYCalc program. For the detailed input parameters refer to the permit application.

Regenerator Vent
Glycol Type: TEG
Annual Hours of Operation: 8760
Dry Gas Flow Rate: 12.00 MMScf/day (maximum)
Control Device: Underground storage tank
Control Efficiency: 30%
Flash Separator: N/A
Stripping Gas: 42,000 Scf/day Dry Product Gas

Uncontrolled Regenerator Emissions	lb/hr	ton/yr
Total VOC Emissions	0.31	1.35
Total HAP Emissions	0.24	1.05

Controlled Regenerator Emissions	lb/hr	ton/yr
Total VOC Emissions	0.22	0.95
Total HAP Emissions	0.17	0.74

Dehydrator Reboiler (PK-100) **350,000 Btu/hr** (Information from company)

Fuel Consumption: 350,000 Btu/hr * 0.0012 Scf/Btu * 8760 hr/yr = 3.5872 MMScf/yr

<u>PM_{10} Emissions</u>
Emission Factor: 7.60 lb/MMScf (AP-42, 1.4-2, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 7.60 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.01 ton/yr

<u>NO_x Emissions</u>
Emission Factor: 94.00 lb/MMScf (AP-42, 1.4-1, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 94.00 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.17 ton/yr

<u>VOC Emissions</u>
Emission Factor: 5.50 lb/MMScf (AP-42, 1.4-2, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 5.50 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.01 ton/yr

<u>CO Emissions</u>
Emission Factor: 40.00 lb/MMScf (AP-42, 1.4-1, 7/98)
Fuel Consumption: 3.587 MMscf/yr

Calculations: 40.00 lb/MMScf * 3.587 MMscf/yr * 0.0005 ton/lb = 0.07 ton/yr

SO_x Emissions
Emission Factor: 0.60 lb/MMScf (AP-42, 1.4-2, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 0.60 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.00 ton/yr

Dehydrator Reboiler (PK-101) **350000 Btu/hr** (Information from company)

Fuel Consumption: 350,000 Btu/hr * 0.0012 Scf/Btu * 8760 hr/yr = 3.5872 MMScf/yr

PM_{10} Emissions
Emission Factor: 7.60 lb/MMScf (AP-42, 1.4-2, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 7.60 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.01 ton/yr

NO_x Emissions
Emission Factor: 94.00 lb/MMScf (AP-42, 1.4-1, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 94.00 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.17 ton/yr

VOC Emissions
Emission Factor: 5.50 lb/MMScf (AP-42, 1.4-2, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 5.50 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.01 ton/yr

CO Emissions
Emission Factor: 40.00 lb/MMScf (AP-42, 1.4-1, 7/98)
Fuel Consumption: 3.587 MMscf/yr
Calculations: 40.00 lb/MMScf * 3.587 MMscf/yr * 0.0005 ton/lb = 0.07 ton/yr

SO_x Emissions
Emission Factor: 0.60 lb/MMScf (AP-42, 1.4-2, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 0.60 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.00 ton/yr

Dehydrator Reboiler (PK-102) **350,000 Btu/hr** (Information from company)

Fuel Consumption: 350,000 Btu/hr * 0.0012 Scf/Btu * 8760 hr/yr = 3.5872 MMScf/yr

PM_{10} Emissions
Emission Factor: 7.60 lb/MMScf (AP-42, 1.4-2, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 7.60 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.01 ton/yr

NO_x Emissions
Emission Factor: 94.00 lb/MMScf (AP-42, 1.4-1, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 94.00 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.17 ton/yr

VOC Emissions
Emission Factor: 5.50 lb/MMScf (AP-42, 1.4-2, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 5.50 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.01 ton/yr

CO Emissions
Emission Factor: 40.00 lb/MMScf (AP-42, 1.4-1, 7/98)
Fuel Consumption: 3.587 MMscf/yr
Calculations: 40.00 lb/MMScf * 3.587 MMscf/yr * 0.0005 ton/lb = 0.07 ton/yr

SO_x Emissions
Emission Factor: 0.60 lb/MMScf (AP-42, 1.4-2, 7/98)
Fuel Consumption: 3.587 MMScf/yr

Calculations: 0.60 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.00 ton/yr

Space Heating Boiler (PK-60) **350000 Btu/hr** (Information from company)

Fuel Consumption: 350,000 Btu/hr * 0.0012 Scf/Btu * 8760 hr/yr = 3.5872 MMScf/yr

PM_{10} Emissions

Emission Factor: 7.60 lb/MMScf (AP-42, 1.4-2, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 7.60 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.01 ton/yr

NO_x Emissions

Emission Factor: 94.00 lb/MMScf (AP-42, 1.4-1, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 94.00 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.17 ton/yr

VOC Emissions

Emission Factor: 5.50 lb/MMScf (AP-42, 1.4-2, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 5.50 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.01 ton/yr

CO Emissions

Emission Factor: 40.00 lb/MMScf (AP-42, 1.4-1, 7/98)
Fuel Consumption: 3.587 MMscf/yr
Calculations: 40.00 lb/MMScf * 3.587 MMscf/yr * 0.0005 ton/lb = 0.07 ton/yr

SO_x Emissions

Emission Factor: 0.60 lb/MMScf (AP-42, 1.4-2, 7/98)
Fuel Consumption: 3.587 MMScf/yr
Calculations: 0.60 lb/MMScf * 3.587 MMScf/yr * 0.0005 ton/lb = 0.00 ton/yr

Emergency Electrical Generator (PK-70)

Brake Horsepower: 126 Hp @ 1800 rpm
Hours of operation: 2000 hr/yr

PM_{10} Emissions

Emission Factor: 0.0022 lb/hp-hr (AP-42, 3.3-1, 10/96)
Calculations: 0.0022 lb/hp-hr * 126 hp = 0.277 lb/hr
0.277 lb/hr * 2000 hr/yr * 0.0005 ton/lb = 0.28 ton/yr

NO_x Emissions

Emission factor: 13.95 gram/bhp-hr (BACT Determination)
Calculations: 13.95 gram/bhp-hr * 126 bhp * 0.002205 lb/gram = 3.88 lb/hr
3.88 lb/hr * 2000 hr/yr * 0.0005 ton/lb = 3.88 ton/yr

VOC Emissions

Emission factor: 0.16 gram/bhp-hr (BACT Determination)
Calculations: 0.16 gram/bhp-hr * 126 bhp * 0.002205 lb/gram = 0.04 lb/hr
0.04 lb/hr * 2000 hr/yr * 0.0005 ton/lb = 0.04 ton/yr

CO Emissions

Emission factor: 0.75 gram/bhp-hr (BACT Determination)
Calculations: 0.75 gram/bhp-hr * 126 bhp * 0.002205 lb/gram = 0.21 lb/hr
0.21 lb/hr * 2000 hr/yr * 0.0005 ton/lb = 0.21 ton/yr

SO_x Emissions

Emission Factor: 0.00205 lb/hp-hr (AP-42, 3.3-1, 10/96)
Calculations: 0.00205 lb/hp-hr * 126 hp = 0.258 lb/hr
0.258 lb/hr * 2000 hr/yr * 0.0005 ton/lb = 0.26 ton/yr

V. Existing Air Quality

EnCana's Bowdoin Compressor Station is located in the SW¼ of the SE¼ of Section 35, Township 35 North, Range 31 East, in Phillips County, Montana. Phillips County is unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

VI. Ambient Air Impact Analysis

The Department previously conducted ambient air quality modeling (SCREEN 3) for the Bowdoin Compressor Station (Permit #2922-00). The results of the SCREEN 3 model showed a maximum 1-hr NO_x ambient concentration of 1347 $\mu g/m^3$. Adding in the 1-hour background concentration of 75 $\mu g/m^3$ resulted in a predicted ambient concentration of 1422 $\mu g/m^3$, which is greater than the Montana NO_x 1-hr standard of 564 $\mu g/m^3$. As a result of the modeling, the Department required the stack heights of the units at the facility to be raised to 24 feet above ground level. Using stack heights of 24 feet above ground level, the model estimated a maximum 1-hr ambient concentration of 350.6 $\mu g/m^3$. Adding in the 1-hour background concentration of 75 $\mu g/m^3$ resulted in a predicted ambient concentration of 425.6 $\mu g/m^3$, which is below the Montana NO_x 1-hr standard of 564 $\mu g/m^3$.

Because the current permit action only increases facility's NO_x emissions by 11.68 ton/yr above the NO_x emissions used in the model (75.08 ton/yr), because the model results were well below the Montana Ambient Air Quality Standards, and due to the fact that the SCREEN 3 model is a very conservative model, the Department determined that the SCREEN 3 modeling that was conducted for Permit #2922-00 still demonstrates that the Bowdoin compressor station will not cause or contribute to a violation of any ambient standard. In the view of the Department, EnCana will continue to operate in compliance with all applicable rules and regulations that apply to the facility.

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air and Waste management Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: EnCana Gathering Services (USA), Inc.
Bowdoin Compressor Station
950 17th Street, Suite 2600
Denver, CO 80202

Air Quality Permit number: 2922-04

Preliminary Determination Issued: 08/15/03
Department Decision Issued: 09/03/03
Permit Final:

1. *Legal Description of Site*: The Bowdoin Compressor Station is located in the SW¼ of the SE¼ of Section 35, Township 35 North, Range 31 East, in Phillips County, Montana.

2. *Description of Project*: EnCana proposes up to a 2,000-Hp natural gas compressor engine and a 350,000 Btu/hr glycol dehydration unit at the Bowdoin Compressor Station.

3. *Objectives of Project*: The proposed project would result in increased business and revenue for EnCana by allowing EnCana to process and transmit greater quantities of natural gas.

4. *Alternatives Considered*: In addition to the proposed action, the Department also considered the "no-action" alternative. The "no-action" alternative would deny issuance of the Montana Air Quality Permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because EnCana demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a BACT analysis, would be included in Permit #2922-04.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources				X		Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites			X			Yes
J	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

Minor impacts on terrestrial or aquatic life and habitats would be expected from the proposed project because deer, antelope, coyotes, geese, ducks, and other terrestrials would potentially use the area around the facility and because air emissions from the facility would increase. While air emissions would increase and corresponding deposition of pollutants would occur, the proposed project would only increase the facility's potential to emit by a relatively small amount. As described in Section 7.F. of this EA, ambient air quality modeling that was previously conducted still demonstrates that the Bowdoin Compressor Station would not cause or contribute to a violation of any ambient standard. The ambient standards are designed to be protective of human health, as well as the environment. In addition, minor land disturbance would result from installing the compressor engine and the dehydration unit. However, any impacts from installing the compressor engine and the dehydration unit would be minor due to the relatively small size of the project. Overall, any impacts to terrestrial and aquatic life and habitats would be minor.

B. Water Quality, Quantity, and Distribution

Minor impacts would be expected on water quality, quantity, and distribution from the proposed project because air emissions from the facility would increase and corresponding deposition of pollutants would occur. The nearest surface water near the facility is Whitewater Creek, which is located approximately ¼ mile East of the facility. While air emissions from the facility would increase and corresponding deposition of pollutants would occur, the proposed project would only increase the facility's potential to emit by a relatively small amount. As described in Section 7.F. of this EA, ambient air quality modeling that was previously conducted still demonstrates that the Bowdoin Compressor Station would not cause or contribute to a violation of any ambient standard. The ambient standards are designed to be protective of human health, as well as the

environment.
Water quality, quantity, and distribution would not be impacted from installing the compressor engine and the dehydration unit because there is no surface water at or relatively close to the site. Furthermore, no discharges into surface water would occur and no use of surface water would be expected for installation of the compressor engine and the dehydration unit. Therefore, no impacts to water quality, quantity, and distribution would be expected from installation of the equipment. Overall, any impacts to water quality, quantity, and distribution from the proposed project would be minor.

C. Geology and Soil Quality, Stability and Moisture

Minor impacts would occur on the geology and soil quality, stability, and moisture from the proposed project because minor land disturbance would be required to install the compressor engine and the dehydration unit. In addition, no discharges, other than air emissions, would occur at the facility. Any impacts to the geology and soil quality, stability and moisture from installing the compressor engine and the dehydration unit would be minor due to the relatively small size of the project.

While air emissions from the facility would increase and corresponding deposition of pollutants would occur, the proposed project would only increase the facility's potential to emit by a relatively small amount. As described in Section 7.F. of this EA, ambient air quality modeling that was previously conducted still demonstrates that the Bowdoin Compressor Station would not cause or contribute to a violation of any ambient standard. The ambient standards are designed to be protective of human health, as well as the environment. Overall, any impacts to the geology and soil quality, stability, and moisture would be minor.

D. Vegetation Cover, Quantity, and Quality

Minor impacts would result on vegetation cover, quantity, and quality because minor land disturbance would be required to install the compressor engine and the dehydration unit. Also, any impacts to the vegetation cover, quantity, and quality from installing the compressor engine and the dehydration unit would be minor due to the relatively small size of the project.

While air emissions from the facility would increase and corresponding deposition of pollutants would occur, the proposed project would only increase the facility's potential to emit by a relatively small amount. As described in Section 7.F. of this EA, ambient air quality modeling that was previously conducted still demonstrates that the Bowdoin Compressor Station would not cause or contribute to a violation of any ambient standard. The ambient standards are designed to be protective of human health, as well as the environment. Overall, any impacts to vegetation cover, quantity, and quality would be minor.

E. Aesthetics

The proposed project would have only minor impacts on the aesthetics of the area because the Bowdoin Compressor Station is an existing compressor station. Any visual impacts would be minor because the facility already contains several compressor engines and two dehydration units. Therefore, the addition of the new equipment would be consistent with the visual aesthetics of the site. Any noise impacts would be minor because the addition of the proposed equipment would not be expected to significantly change the noise level currently existing at the facility.

F. Air Quality

The air quality of the area would realize minor impacts from the proposed project because air emissions from the Bowdoin Compressor Station would increase. The Department previously conducted ambient air quality modeling (SCREEN 3) for the Bowdoin Compressor Station (Permit #2922-00) and the model predicted a maximum 1-hr ambient NO_x concentration of 425.6 $\mu g/m^3$, which is below the Montana NO_x 1-hr standard of 564 $\mu g/m^3$. Because the proposed project only increases the facility's NO_x emissions by 11.68 ton/yr above the NO_x emissions used in the model (75.08 ton/yr), because the model results were well below the Montana Ambient Air Quality Standards, and due to the fact that the SCREEN 3 model is a very conservative model, the Department determined that the SCREEN 3 modeling that was conducted for Permit #2922-00 still demonstrates that the Bowdoin compressor station will not cause or contribute to a violation of any ambient standard. Therefore, any impacts to air quality resulting from the proposed project would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

In an effort to identify any unique endangered, fragile, or limited environmental resources in the area, the Department researched its files for the Bowdoin Compressor Station. In 1998, the Department requested information from the Montana Natural Heritage Program, Natural Resource Information System (NRIS) regarding any unique endangered, fragile, or limited environmental resources in the area. The NRIS search identified the Common Tem as a specie of special concern in the general area of the proposed facility. In this case, the area was defined by the section, township, and range of the proposed location with an additional 1-mile buffer zone. Due to the minor amounts of land disturbance that would be required, the fact that the Bowdoin Compressor Station is an existing compressor station, and because of the relatively low levels of pollutants that would be emitted, the Department determined that it would be unlikely that the proposed project would impact any species of special concern.

H. Demands on Environmental Resource of Water, Air and Energy

The proposed project would have minor impacts on the demands for the environmental resources of air and water because air emissions from the facility would increase and corresponding deposition of pollutants would occur. Deposition of pollutants would occur as a result of operating the facility; however, as explained in Section 7.F of this EA, the proposed project would only increase the facility's potential to emit by a relatively small amount and ambient air quality modeling that was previously conducted still demonstrates that the Bowdoin Compressor Station would not cause or contribute to a violation of any ambient standard. The ambient standards are designed to be protective of human health, as well as the environment.

The proposed project would not be expected to have any impacts on the demand for the environmental resource of energy because the facility is an existing compressor station. Overall, the impacts for the demands on the environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

The Bowdoin Compressor Station is an existing compressor station located within a fenced property line and any ground disturbance would be minor. According to past correspondence from the Montana Historical Society, State Historic Preservation Society (SHPO), there is low likelihood of adverse disturbance to any known archaeological or historic site, given previous industrial disturbance within the area. Therefore, the Department determined that the chance of the proposed project impacting any historical or archaeological sites would be minor.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts on the physical and biological aspects of the human environment in the immediate area would be minor due to the relatively small size of the project. Only small amounts of land would be disturbed to complete the project and only relatively small amounts of air pollutants would be emitted. In addition, the facility is an existing compressor station and the project would result in a relatively small increase in emissions. The Department believes that this facility could be expected to continue to operate in compliance with all applicable rules and regulations as would be outlined in Permit #2922-04.

8. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores				X		Yes
B	Cultural Uniqueness and Diversity				X		Yes
C	Local and State Tax Base and Tax Revenue				X		Yes
D	Agricultural or Industrial Production				X		Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G	Quantity and Distribution of Employment				X		Yes
H	Distribution of Population				X		Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity			X			Yes
K	Locally Adopted Environmental Plans and Goals				X		Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

The proposed project would not have any impacts on native or traditional lifestyles or communities (social structures or mores) in the area because the proposed project would take place at an existing compressor station located in a relatively remote location.

B. Cultural Uniqueness and Diversity

The proposed project would not have any impacts to the cultural uniqueness and diversity of the area because the proposed project would take place at an existing compressor station located in a relatively remote location.

C. Local and State Tax Base and Tax Revenue

The proposed project would not have any impacts to the local and state tax base and tax revenue because no new employees would be expected to be hired as a result of installing and/or operating the compressor engine and the dehydration unit. The facility would simply continue to operate, with a larger production capacity, at the existing site location.

D. Agricultural or Industrial Production

The land surrounding the facility is rural grass lands. Agricultural or industrial production in the area would not be expected to be impacted because the facility is an existing, relatively small compressor station and the proposed project would simply increase the production capacity of the facility.

E. Human Health

The proposed project would result in only minor, if any, impacts on human health. As explained in Section 7.F of this EA, the proposed project would only increase the facility's potential to emit by a relatively small amount and ambient air quality modeling that was previously conducted still demonstrates that the Bowdoin Compressor Station would not cause or contribute to a violation of any ambient standard. The Department believes that the proposed project would comply with all applicable air quality rules, regulations, and standards. These rules, regulations, and standards are designed to be protective of human health.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project would not have any impacts on access to and quality of recreational and wilderness activities because the facility is an existing compressor station located in a relatively remote location. The proposed project consists of adding a compressor engine and a dehydration unit to the existing facility. Any increase in noise from the facility would not be expected to be significantly noticeable.

G. Quantity and Distribution of Employment

The proposed project would not have any impacts on the quantity and distribution of employment because no new employees would be hired as a result of installing and/or operating the compressor engine and dehydration unit.

H. Distribution of Population

The proposed project would not have any impacts on the distribution of population in the area because the facility is an existing compressor station located in a relatively remote location and the proposed project would not create any new jobs.

I. Demands for Government Services

There would be minor impacts on the demands for government services because additional time would be required by government agencies to issue Permit #2922-04. Ensuring compliance with applicable rules, standards, and Permit #2922-04 would require minor amounts of additional time beyond what is currently done. Overall, any demands for government services to regulate the facility would be minor due to the relatively small size of the facility and the proposed project.

J. Industrial and Commercial Activity

Minor impacts would be expected on the local industrial and commercial activity because the proposed project would only represent a small increase the industrial activity in the area. The commercial activity in the area would be expected to remain the same. The proposed project would be relatively small and would take place at a relatively remote location and would consist of adding a compressor engine and a dehydration unit to the existing facility. Overall, any impacts to the industrial and commercial activity in the area would be minor.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans and goals that would be affected by issuing Permit #2922-04. The state standards would protect the proposed site and the environment surrounding the site.

L. Cumulative and Secondary Impacts

Overall, the social and economic cumulative and secondary impacts from this project would be minor because the proposed project would take place at an existing facility and overall emissions from the facility would increase by a relatively small amount. New businesses would not be drawn to the area and jobs would not be created or lost due to the proposed project. Because no new employees would be hired for the proposed project, there would be no economic impacts from new employees.

Recommendation: No EIS is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permit action is for the addition of one compressor engine (up to 2,000-Hp) and a 350,000 Btu/hr dehydration unit. Permit #2922-04 would include conditions and limitations to ensure the facility would operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with the proposed project.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

Individuals or groups contributing to this EA: Department of Environmental Quality – Air and Waste management Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

EA prepared by: Dave Aguirre
Date: August 6, 2003